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bikeway needs study

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ORIGINAL

NORTH BEACH
ASSATEAGUE ISLAND

NATIONAL SEASHORE / MARYLAND-VIRGINIA

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BIKEWAY NEEDS STUDY

NORTH BEACH DEVELOPED AREA, ASSATEAGUE ISLAND NATIONAL SEASHORE

MARYLAND

April 1986

Revised November 1986

U.S. Department of the Interior / National Park Service

I

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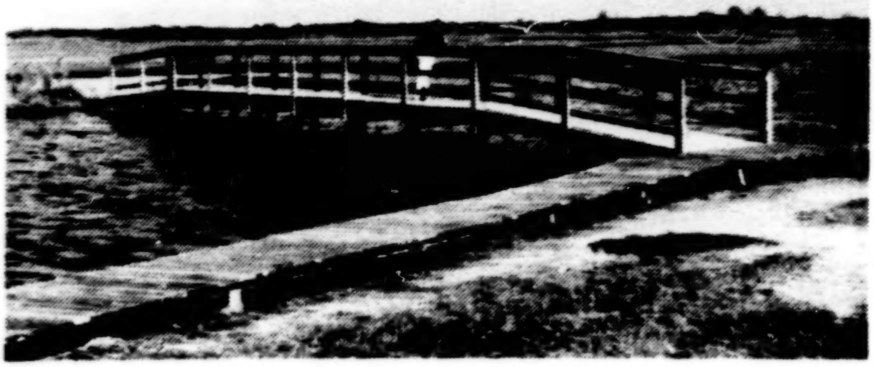


ASSATEAGUE ISLAND OFFERS VISITOR OPPORTUNITIES FOR QUIET CONTEMPLATION AS WELL AS ACTIVE RECREATION

INTRODUCTION

ASSATEAGUE ISLAND

Assateague Island is a 37-mile-long barrier island located along the Atlantic coast of Maryland and Virginia. In order to protect and develop it for public outdoor recreation and enjoyment, Congress on September 21, 1985 authorized (PL89-195) the establishment of Assateague Island National Seashore (ASIS). Major factors for creating the national seashore included a growing demand for seaside recreation, the infeasibility of private development on the land, and possible economic benefits to the local two-county economy.

Assateague Island was established according to a management arrangement that included a National Park Service (NPS) area, a Maryland State park area, and a national wildlife refuge. Each agency manages its jurisdiction according to its basic mission, policies, and regulations. The U.S. Fish and Wildlife Service has over 39 years of experience managing the Chincoteague National Wildlife Refuge; the National Park Service and Maryland Park Service currently have 17 years of experience in managing Assateague Island.

Today, Assateague Island is an important national resource providing salt water-oriented recreational opportunities for some 30 million people living within a 200-mile radius.

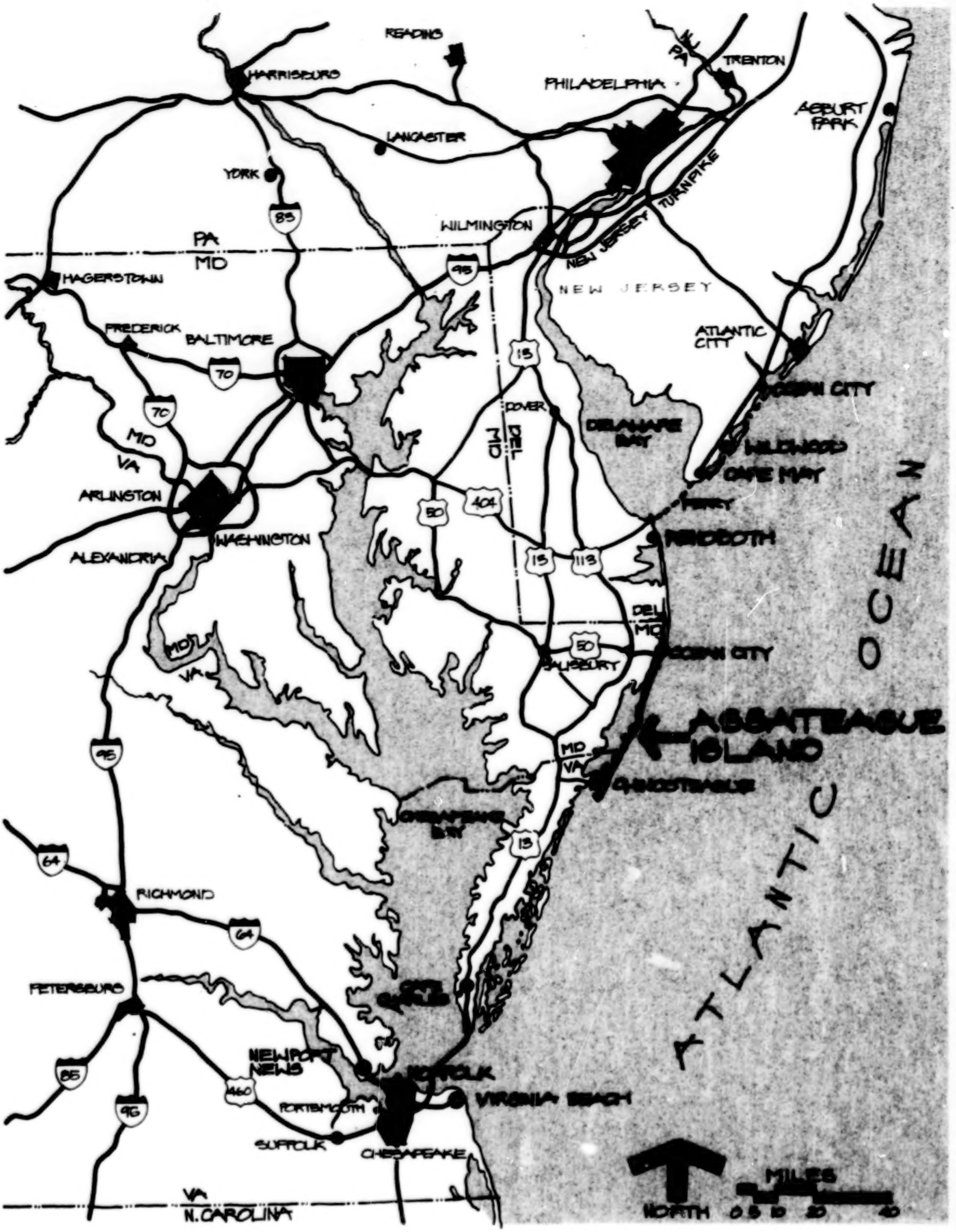
NATIONAL PARK SERVICE

The three agencies have developed areas with visitor facilities at both ends of the island, called North Assateague and South Assateague respectively, which are separated by 25 miles of undeveloped beach. The NPS administers the approximately 7,900 acres of Assateague island north and south of Assateague State Park to the Virginia State line (see Existing Development - Maryland map). Information, exhibits, and publications are available at the visitor center on the mainland before the Verrazano Bridge access to the island. The NPS maintains a lifeguard-protected beach with a bathhouse and picnic area and two campgrounds at the North Beach developed area.

The Bayside Campground at North Beach is located in an area of stabilized dredge spoil once meant to be continued westward across Sinepuxent Bay as a causeway to the mainland. Currently, 40 tent/RV sites are available with portable toilets and cold water furnished. In the same construction proposal for a bikeway, the complete rebuilding and expansion of the campground will occur, as well as a new road to the western tip of the causeway. A new 62-vehicle parking area will be constructed at the bayside terminus for future interpretive and boat launching activities.

The North Beach Campground currently has 86 camping sites located adjacent to the oceanside dunes. The sites provide for campers pulling trailers as well as tenters, and portable toilets and cold water are furnished. A group

ASSATEAGUE ISLAND ALSO MEANS CAMPING, BICYCLING, BOATING, AND PONIES,



REGION
ASSATEAGUE ISLAND

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UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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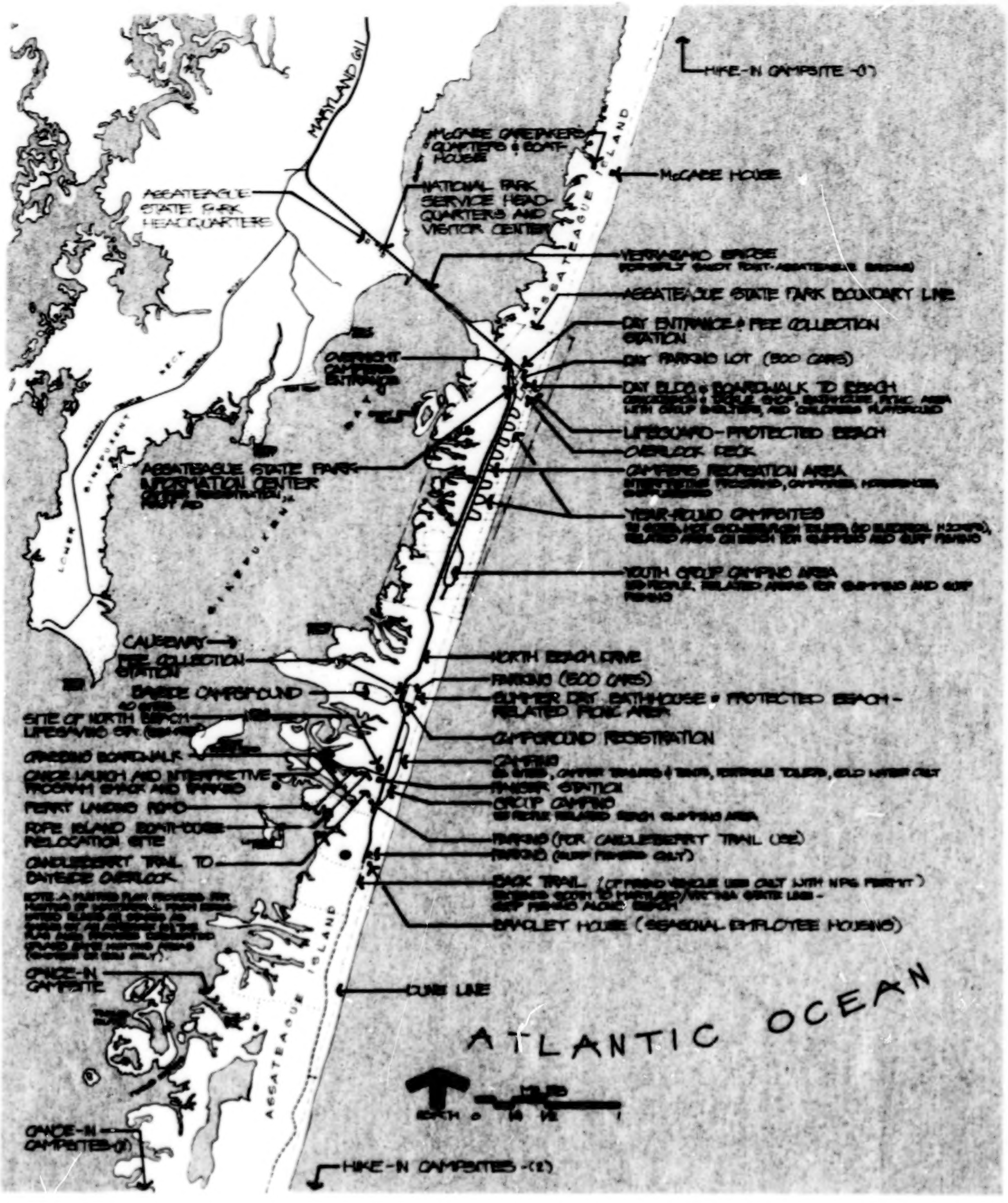

HIKE-IN CAMPSITE -(1)
MARYLAND 611
McCABE CARETAKERS QUARTERS & BOAT HOUSE
McCABE HOUSE
ASSATEAGUE STATE PARK HEADQUARTERS
NATIONAL PARK SERVICE HEADQUARTERS AND VISITOR CENTER
VERRAZANO BRIDGE
ASSATEAGUE STATE PARK BOUNDARY LINE
DAY ENTRANCE & FEE COLLECTION STATION
OVERNIGHT CAMPING ENTRANCE
DAY PARKING LOT (500 CARS)
DAY BLDG & BOARDWALK TO BEACH
LIFEGUARD-PROTECTED BEACH
OVERLOOK DECK
ASSATEAGUE STATE PARK INFORMATION CENTER
CAMPERS RECREATION AREA
YEAR-ROUND CAMPSITES
YOUTH GROUP CAMPING AREA
SINEPUXENT BAY
LOWER SINEPUXENT NECK
CAUSEWAY
FEE COLLECTION STATION
NORTH BEACH DRIVE
PARKING (500 CARS)
BAYSIDE CAMPGROUND
40 SITES
SUMMER DAY BATHHOUSE & PROTECTED BEACH - RELATED PICNIC AREA
SITE OF NORTH BEACH LIFESAVING STA.
CAMPGROUND REGISTRATION
CROSSING BOARDWALK
CAMPING
CANOE LAUNCH AND INTERPRETIVE PROGRAM SHACK AND PARKING
RANGER STATION
GROUP CAMPING
FERRY LANDING ROAD
POPE ISLAND BOATHOUSE RELOCATION SITE
PARKING (FOR CANDLEBERRY TRAIL USE)
PARKING (SURF FISHING ONLY)
CANDLEBERRY TRAIL TO BAYSIDE OVERLOOK
BACK TRAIL
BRADLEY HOUSE (SEASONAL EMPLOYEE HOUSING)
CANOE-IN CAMPSITE
DUNE LINE
ASSATEAGUE ISLAND
ATLANTIC OCEAN
NORTH
MILES
0
1/4
1/2
1
CANOE-IN CAMPSITES-(2)
HIKE-IN CAMPSITES -(2)

LEGEND

▤ ASSATEAGUE STATE PARK - MANAGED BY THE MARYLAND DEPARTMENT OF NATURAL RESOURCES

☐ ASSATEAGUE ISLAND NATIONAL SEASHORE - MANAGED BY THE NATIONAL PARK SERVICE

EXISTING DEVELOPMENT - MARYLAND

ASSATEAGUE ISLAND NATIONAL SEASHORE
ASSATEAGUE STATE PARK

UNITED STATES DEPARTMENT OF THE INTERIOR

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FERRY LANDING ROAD PROVIDES BOATING ACCESS TO THE SINEPUXTENT BAY AND BICYCLING TO INTERPRETATION AND HANDS-ON CRABBING camping area is provided for approximately 125 people. With the construction of a new North Beach Road alignment, the old route will be used exclusively for a revised and expanded campground.

Ferry Landing Road, opposite the North Beach Campground, leads to an old ferry landing on the Sinepuxent Bay where interpretive programs are offered and limited boat launching is provided for small boats being carried on car tops or trailers. As a very popular site, the parking area will be reconstructed.

Currently, interpretive activities include guided walks from trailheads and other parking areas, recreational demonstrations, and evening programs regularly scheduled from Memorial Day through Labor Day. Upon request, NPS rangers present programs to groups throughout the year. As improved and additional facilities are provided, it can be expected that interpretive activities will increase, including the possibility of bicycle tour interpretation.

MARYLAND PARK SERVICE

The Maryland Park Service, Maryland Department of Natural Resources, administers Assateague State Park (ASP) (see Existing Development - Maryland map). The 680-acre state park extends for 2 miles and includes a 500-car parking area, a 311-site campground with bathhouses, a youth group campsite for 125 people, picnic tables, a bathhouse for day visitors, group shelters, and a concession stand with food services and souvenirs. Administrative and maintenance facilities are located on the mainland.

PUBLIC USE

The popularity of Assateague Island is clearly shown by its public visitation of over 2.3 million people in 1985, an increase of 14 percent in 5 years. Through 1985, public use records were kept on a parkwide basis, but since January 1986, records are now kept separately for the Virginia and Maryland portions. From the comparisons of the two portions to date, and knowledge of other data, e.g., no campgrounds in the Virginia portion, conservative extrapolation of previously combined data can be used to give a picture of use in the North Beach Area.

An average of nearly 700,000 visitors used the North Beach annually from 1981 to 1985. However, in the first 9 months of 1986, visitation has reached nearly 1,010,000 portending a probable increase in the neighborhood of 50 percent over the previous 5-year average. The preponderance of visitors arrive by private automobiles, recreational vehicles, and group buses. The average traffic volume in the busiest 9 months of the year is approximately 4,200 vehicles per day.

Recreational vehicles are a common means of access to North Beach, both for day use and camping. From camping permit data, 44 percent of 23,092 overnight visitor stays at North Beach occurred in recreational vehicles from October 1985 through September 1986.

VISITORS ACCESS THE NORTH BEACH DAY USE DEVELOPMENT BY AUTOMOBILE, RECREATIONAL VEHICLE, AND BICYCLE

Another form of visitor entry is by bicycle. For the last 3 years, over 31,000 such entries have been recorded for the entire island. From the separate data for 1986 (January-September), only 2 percent can be attributed to the North Beach area. This is quite understandable in that over 7-1/2 miles of safe bikeway are currently available for visitor access to significant facilities and resources within the southern area, while at North Beach bicycle access is limited to the 3,000 linear feet of paved shoulders from the Verrazano Bridge to the ASP by MDOT. Currently, bicycling as a means of transportation at North Beach is not encouraged because of the lack of a safe bikeway environment. However, the potential for bicycling is evidenced by a windshield survey on August 15, 1986 (11:55 a.m. - 12:20 p.m.), which recorded 238 bicycles in the state park 311-site campground.

INDICATION OF BIKEWAY NEEDS

PREVIOUS BIKEWAY PLANNING

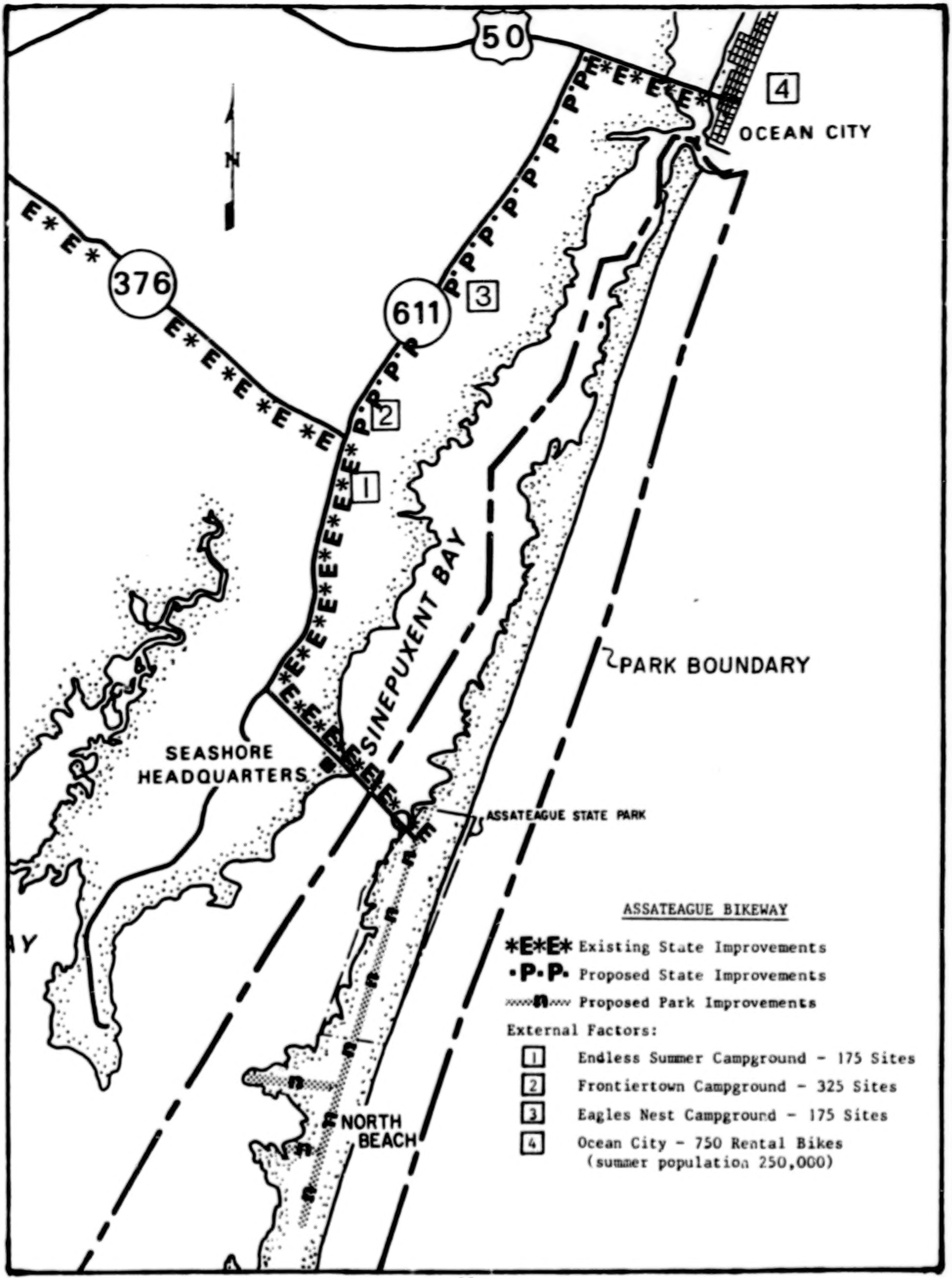
The General Management Plan and Development Concept Plan, prepared by the NPS for ASIS, and approved in January 1982, proposed the development of a bikeway system within the North Beach Developed Area of the national seashore. The Engineering Study Report prepared by the Federal Highway Administration (FHWA) in 1985 states, "The concept of developing a bike path along North Beach Drive...is considered important as a safety measure." Assateague State Park, the Maryland Department of Transportation (MDOT), and Town of Ocean City, Maryland, all support the use of bicycles as an alternative transportation mode to motorized vehicles to and within the North Beach Developed Area (see letters of support from these agencies). In addition, the bikeway system would greatly enhance the physical safety and sense of well being of bicyclists sharing the roadway systems with automobiles, recreation vehicles, hikers, and wild ponies.

If constructed, the bikeway would be managed and maintained by the NPS for the exclusive use of bicyclists and developed in conjunction with the scheduled road rehabilitation for the North Beach Developed Area. In the ASIS Engineering Study Report prepared by the FHWA in 1985, a cost of approximately $180,000 was estimated for construction of the bikeway system.

A CONTIGUOUS BIKEWAY SYSTEM

The development of a bicycle system for use by local residents and park visitors is underway. The Town of Ocean City, Maryland, currently has bicycle lanes in place along U.S. Route 50 (see region map). The MDOT has recognized, over the years, the increased use of bicycles for transportation from Ocean City to the Assateague Island area. They propose to improve Maryland 611 from U.S. 50 to Assateague Island (see Assateague Bikeway Ocean City map) and have completed the addition of paved shoulders along portions of Route 611 between the intersection of Maryland Route 376 and Assateague Island and plan to complete this segment as well as provide bicycle lanes between U.S. 50 and Maryland 376. All improvements are scheduled for completion by June 1988.

BICYCLISTS ARRIVE AND LEAVE ASSATEAGUE ISLAND ON MD 611


50
N
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611
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P·P·
1
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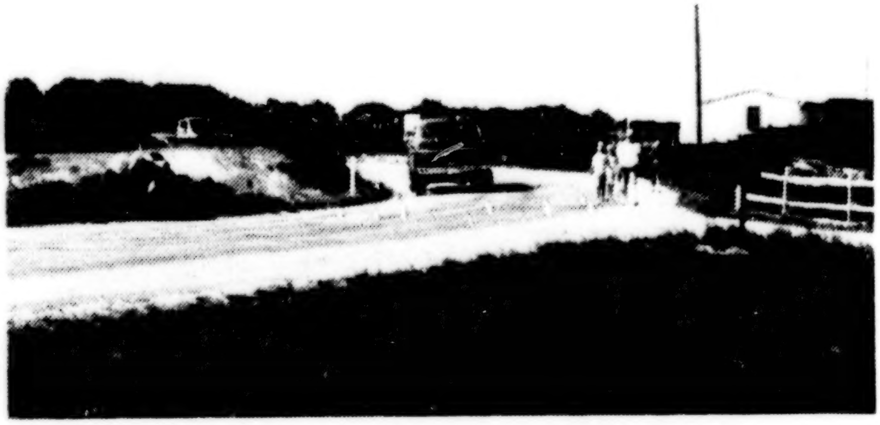
3
4
OCEAN CITY
SINEPUXENT BAY
PARK BOUNDARY
SEASHORE HEADQUARTERS
ASSATEAGUE STATE PARK
NORTH BEACH
AY
ASSATEAGUE BIKEWAY
*E*E* Existing State Improvements
·P·P· Proposed State Improvements
n Proposed Park Improvements
External Factors:
1 Endless Summer Campground - 175 Sites
2 Frontiertown Campground - 325 Sites
3 Eagles Nest Campground - 175 Sites
4 Ocean City - 750 Rental Bikes (summer population 250,000)



NORTH BEACH ROAD IS A COMMON ROUTE SHARED BY AUTOMOBILES,
RECREATIONAL VEHICLES, WILD PONIES, HIKERS, AND BICYCLISTS

The NPS is committed to work with MDOT to provide a safe and functional bike system to and on Assateague Island. Bike trails are to be developed to all North Beach visitor facilities. When the bikeway plans of Ocean City, MDOT, and the NPS are completed, a contiguous bikeway route from Ocean City to and within the North Beach Developed Area in ASIS will provide a safe alternative means of transportation between the activity centers on the island as well as to the motels, restaurants, and amusement centers of Ocean City and its environs.

ACCIDENT POTENTIAL

Currently bicyclists at North Beach must share the narrow roadways with motorized vehicles, wild ponies, and hikers. Several reports have been received that cyclists are being forced off the roadway and their safety threatened. While injury accidents involving bicyclists and vehicles have not been numerous along the North Beach roadway, the potential for severe accidents exists because bicyclists must currently share the same narrow travel lanes with moving vehicles and ponies, while avoiding stopped vehicles and pedestrians observing the feral animals.

The National Safety Council has determined that the calculable cost of one death resulting from a motor vehicle accident in 1983 totaled $210,000 (see Estimating the Cost of Accidents 1983), which is more than the initial estimated cost of the proposed bikeway system. Having to share the narrow roadways with heavy traffic not only poses a threat to bicyclists' lives and health, it also greatly diminishes the quality of the relaxing park experience anticipated at North Beach.

THE PROPOSED BIKEWAY SYSTEM

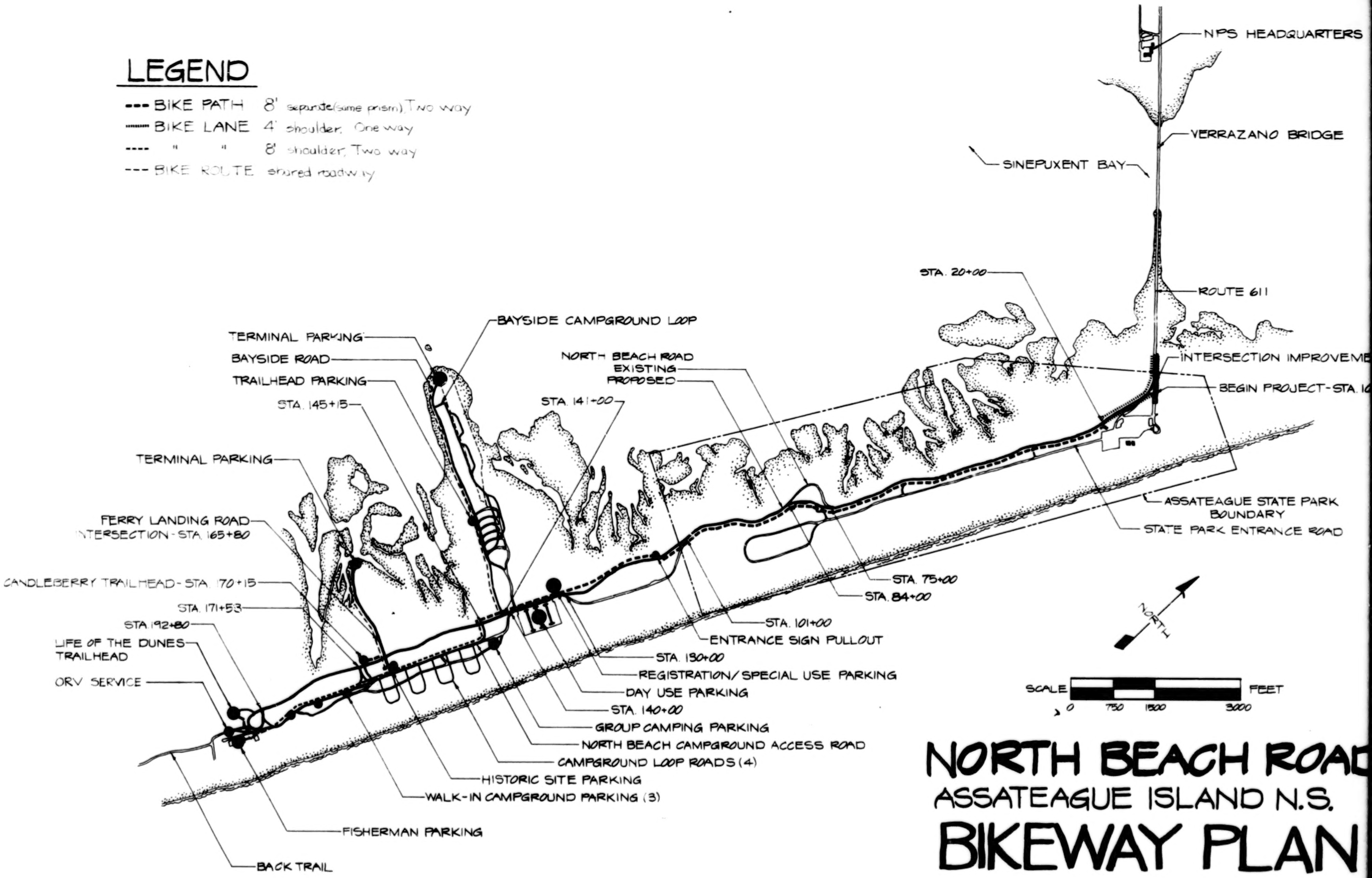
DESIGN AND CONSTRUCTION

The bikeway system proposed is an integral portion of the FHWA funded road rehabilitation work in both the North Beach Developed Area of ASIS and within ASP (see NBR-Bikeway Plan). Approximately 2.9 miles of bikeway system is planned within the national seashore, while approximately 1.8 miles is proposed for construction on the federal right-of-way within ASP. A combination bike lane/bike path/bike route system is being proposed and will include all appropriate striping, signing, and pavement markings required to designate the use of bicycles.

The proposal is in accord with FHWA's Federal-Aid Highway Program Manual (Volume 6, Chapter 2, Section 5, Subsection 2), Pedestrian and Bicycle Accommodation, 1984, and as further defined in June 1986 by FHWA and U.S. Department of Transportation as Federal Lands Highway Program funding eligible, thus:

> "Sidewalks and trails that are part of the roadway prism to separate pedestrians and bicyclists from vehicular traffic for operational safety purposes."

NORTH BEACH ROAD
ASSATEAGUE ISLAND N.S.
BIKEWAY PLAN



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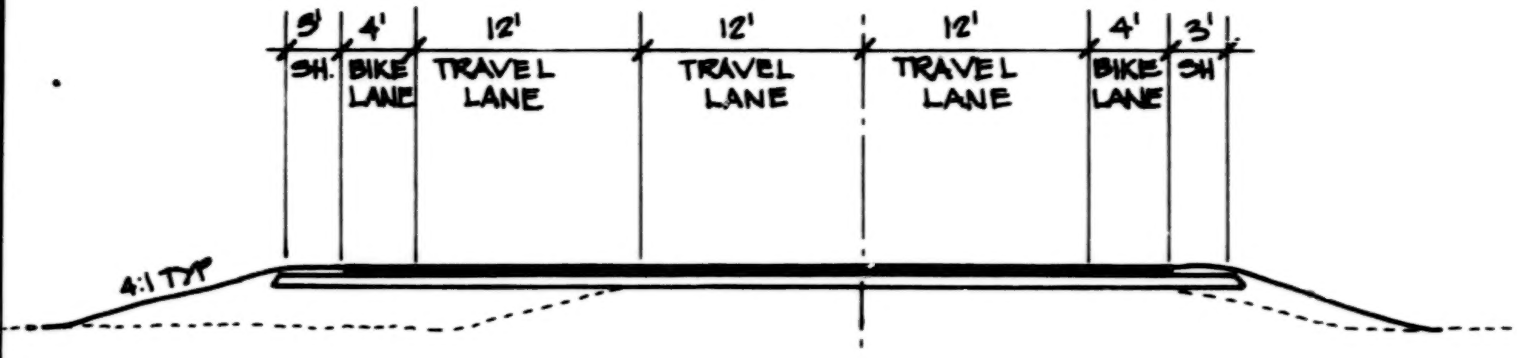
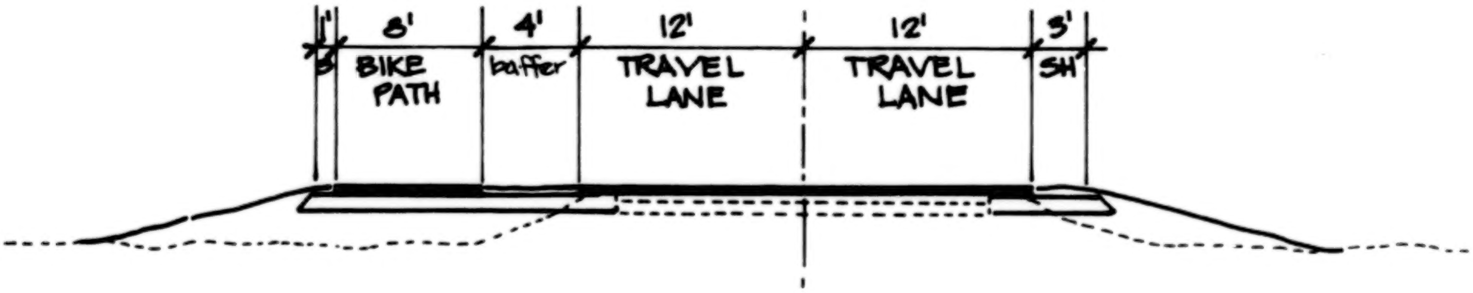
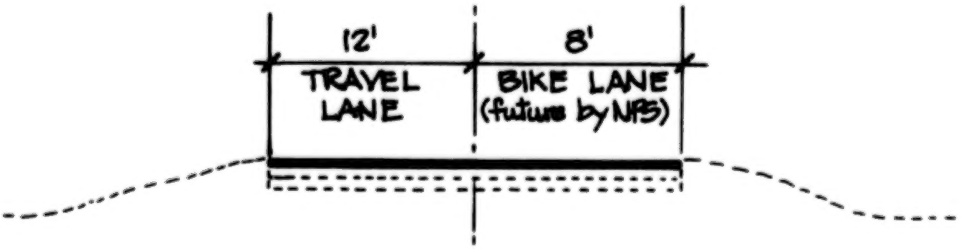


TYP. SECTION- NORTH BEACH ROAD sta. 10+00 to 20+00



TYP. SECTION- NORTH BEACH ROAD

sta. 20+00 to 114+00 path on east
sta. 114+00 to 145+15 path on west
sta. 170+15 to 175+50 path on west
sta. 194+00 to 198+00 path on east and south (buffer varies)



TYP. SECTION -NORTH BEACH CAMPGROUND ACCESS ROAD

As shown on the Bikeway Plan and following typical cross-sections, the system will begin at the improved intersection of Route 611 and North Beach Road as 4-foot paved lanes to Sta 20+00; then along the east side of North Beach Road as an 8-foot path separated from the motorized vehicle lanes by a 4-foot buffer to the entrance sign pullout, where it will cross over to the west side of North Beach Road, again as a path, to the North Beach Campground Access Road. From this poing, the bikeway will be an 8-foot, two-way lane adjacent to a one-way vehicle travel lane, using for the most part the existing road surface available from the change from two-way to one-way vehicular traffic. (FHWA funding will provide the asphalt overlay of the old road, but NPS will execute the striping and other delineation of the bike lane at a future date.) From the southern end of the North Beach Campground Access Road will proceed the typical bicycle path, around the North Beach Road rotary terminus, to the Life Of The Dunes parking area.

Bicycle access to the Bayside Campground and Terminal Parking Area will be as a route sharing the proposed roadways with vehicles. Similarly, access to the Ferry Landing Road Terminal Parking Area will be a route using the Historic Site Parking Area and Ferry Landing Road. A short portion of bike path will be constructed along North Beach Road (Sta 170+15 to 171+50) to connect Candleberry Trailhead to the Ferry Landing Road route.

The design and construction of the bikeway system will conform to the American Association of State Highway Transportation Officials' standards, Guide for Development of New Bicycle Facilities, 1981, and meets all National Park Service legal and administrative compliances.

NPS MANAGEMENT

The National Park Service has direct responsibility for maintenance and operation of all facilities within ASIS. The NPS has also acquired sufficient right-of-way along that section of North Beach Road within ASP to construct the bikeway system proposed. The NPS has entered into agreement with that state agency to perform all required maintenance on that section of bikeway within the ASP boundary. Because the bikeway system is contiguous with existing and new roads, its routine maintenance can be considered incidental to that of the roadway. The national seashore staff has sufficient skills and equipment necessary to carry out all routine maintenance and minor repairs required along the bikeway system.

The proposed bikeway system will be managed for the exclusive use of bicyclists. Regulations banning off-road vehicles and snowmobiles and prohibiting use of the bikeway either as a traffic lane or for parking will be enforced by park rangers. Only in the most adverse winter conditions of high water and drifting sand would the bikeway be used for any emergency access.

Effectuation of the North Beach Developed Area Bikeway System meets the short-range and long-range management needs of the National Park Service. As an alternative means to motorized vehicular access, it conforms with agreements and understandings with adjacent jurisdictions. Secondly, it provides safe intra-area alternative transportation opportunities between activity centers on state and federal island properties, thus reducing the potential for human injury and auto emissions, and increasing visitor appreciation of the unique resources and recreation, extant and forthcoming.

APPENDIX A

TOWN OF OCEAN CITY

MAYOR & CITY COUNCIL
OCEAN CITY, MARYLAND 21842

ROLAND E. POWELL
Mayor

COUNCIL MEMBERS
GRANVILLE D. TRIMPER
President

LEE DUGGAN
Secretary

EDWARD J. ELLIS
GEORGE HURLEY
RICHARD W. MEEHAN
LEIGHTON MOORE
JOHN G. TRUMPOWER

ANTHONY W. BARRETT
City Manager

SHELDON E. DIETERT
Clerk-Treasurer

REPLY TO:
City Manager
City Hall
P.O. Box 158

March 17, 1986

Mr. Roger K. Rector,
Superintendent
Assateague Island National Seashore
Route 2, Box 294
Berlin, MD 21811

Dear Mr. Rector:

The number of people who are using bicycles for transportation in Ocean City and the surrounding area is increasing every year. Many of these people travel from Ocean City to Assateague Island on their bicycles by following U.S. Route 50 and Maryland 611. I am sure quite a few visitors who are staying in motels and campgrounds along both those routes are also using bicycles when traveling out to Assateague.

There are existing bicycle lanes in Ocean City, along U.S. Route 50 and on portions of Maryland 611. It is my understanding the Maryland Department of Transportation is planning to complete the remaining sections of Route 611 as soon as possible. These improvements will provide additional safety to cyclists operating all the way from Ocean City to the park boundary.

The officials in Ocean City certainly support these improvements to bicycle transportation and encourage development of bikeways on Assateague Island for a continuation of this transportation corridor.

Sincerely,

Anthony W. Barrett

ANTHONY W. BARRETT,
City Manager

THE TOWN OF OCEAN CITY IS AN EQUAL OPPORTUNITY EMPLOYER

APPENDIX B

MARYLAND FOREST, PARK AND WILDLIFE SERVICE
ASSATEAGUE STATE PARK
ROUTE 2, BOX 293
BERLIN, MARYLAND 21811

DONALD E. MacLAUCHLAN
DIRECTOR

WILLIAM F. SIMMONS
PARK MANAGER

March 19, 1986 #5430

Mr. Roger Rector
Superintendent
Assateague Island National Seashore
Route 2, Box 294
Berlin, Maryland 21811

Dear Roger:

Each year we are experiencing more and more of our visitors camping in the State park who bicycle to your park area for day usage. You are very well aware that all these bicyclists must currently share a narrow roadway with automobiles. The potential for severe or fatal accidents is substantial and will no doubt increase as this bicycle use continues to grow.

As Park Manager of Assateague State Park, I actively support the use of bicycles as an alternate transportation mode and the development of bikeways to accommodate this use. We are certainly pleased the National Park Service is scheduled to start constructing a bicycle route this year along with roadway improvements over the entire length of the developed area of the island in Maryland. This will provide a safer means of transportation for these bicyclists.

If any of us at the Maryland Department of Natural Resources can be of assistance, please let me know.

Sincerely,

W. Simmons

Bill Simmons
Park Manager

BS/rp

TTY FOR DEAF: STATEWIDE 1-800-492-5062 / BALTIMORE 269-2609

APPENDIX C

Maryland Department of Transportation
State Highway Administration

William K. Hellmann
Secretary

Hal Kassoff
Administrator

PLEASE REPLY TO:
OFFICE OF DISTRICT ENGINEER
[illegible]
SALISBURY, MARYLAND 21801

July 19, 1985

Mr. Bernard Fagan
Assistant Superintendent
National Park Service
Route 2, P.O. Box 294
Berlin, Maryland 21811

Re: Maryland 611 from
U.S. 50 to Maryland 376

Dear Mr. Fagan:

In response to our recent telephone conversation I am confirming that the Administration proposes to improve Maryland 611 from U.S. 50 through the intersection at Maryland 376 and also we intend to add shoulders where they do not exist between Maryland 376 and the recently completed improvement which provide access to the Assateague Park.

The Administration has recoginized over the years the increased use of bicycles for transportation in the Ocean City - Assateague Island area, consequently, on the subject project we intend to provide shoulders which will accomodate bicyclists as well as larger vehicles towing campers, trailers, etc. Also, we intend to add shoulders throughout the length of Maryland 611 to provide safety features for cyclists operating in the area of Ocean City and the Park. Our experience has been that the paved shoulders are satisfactory for cyclists use and provide a much needed bike-way for their safety.

If there is any other information you would like concerning our proposed project, please let me know.

Very truly yours,

J. W. Magill

James W. Magill
Highway District Engineer

JWM:jev
CC: Mr. A. L. Larson

National
Safety
Council

Bulletin

Estimating the Cost of Accidents 1983

One of the most useful ways to measure the value of accident prevention work is through an estimate of accident costs. Without reference to costs, no accident prevention statement is complete. However, exact cost calculations from information now available are not possible. They only can be approximated. This bulletin shows how costs can be estimated for a community or state.

It is important to round an estimate, to show it is an approximation — not an exact figure. The recommended rule is: if the estimate is less than $3,000,000, round to the nearest $100,000; if $3,000,000 to $10,000,000 round to nearest $500,000; if $10,000,000 to $30,000,000 round to nearest $1,000,000; if more than $30,000,000 round to nearest $5,000,000.

NOTE: Cost estimates are not comparable from year to year. As additional or more precise data become available, they are used from that year forward. Previously estimated figures are not revised.

Cost of Motor-Vehicle Accidents

The calculable costs of motor-vehicle accidents are wage loss, medical expense, insurance administration cost and property damage. In 1983 the costs of all these items per case were:

Death	$210.000
Nonfatal disabling injury	8.600
Property damage accident (including minor injuries)	1,150

Because of the different ratios of nonfatal injuries and property damage accidents per death, the cost *per death* for ALL accidents — fatal, nonfatal, and property damage — differs for urban and rural accidents, as shown here:

	All	Urban	Rural
Nonfatal injuries per death	36	58	23
Property damage accidents* per death	390	747	171
Cost, per death** (rounded)	$970,000	$1.500.000	$640.000

* Excludes minor damage cases that may not be repaired — for example a hub cap smashed against a curb during parking.

** Includes cost items listed above for one death and the number of injury and property damage accidents indicated by the appropriate ratios.

These averages may be used to estimate the motor-vehicle accident cost in cities or states, but if a city is small they must be used with care. For example, if the year's death total is five, and four resulted from one accident, do not use the $1 500.000 average per death. It includes the cost of 58 injuries and 747 property damage accidents. In such an unusual experience these ratios do not hold. Here it is more accurate to use the unit costs for deaths, injuries, and property damage accidents separately.

If a city had fewer than ten deaths during a year, it is more satisfactory to use the following unit costs for each death:

Age	Male	Female
Under 5	$130.000	$ 70.000
5-14 years	$190.000	$ 90.000
15-24 years	$280.000	$140.000
25-44 years	$330.000	$170.000
45-64 years	$130.000	$ 60.000
65 and over	$ 20.000	$ 19.000

444 North Michigan Avenue
Chicago, Illinois 60611
312-527-4800

If a city has at least 10 deaths, using the all-ages $210,000 average is usually satisfactory. Many cities and states do not keep complete injury and property damage accident records. If a city's records are believed incomplete, using the $1,500,000 unit cost per death is more satisfactory. However, use this figure only if there were at least 10 deaths and only one or two occurred in each fatal accident. When fewer than 10 deaths, figure the deaths, injuries, and property damage cases separately, adding a reasonable amount to cover the estimated degree of incompleteness.

Cost of Motor-Vehicle Injuries by Severity

Estimates of the 1983 costs by severity of injuries, as used on the monthly state and city reports to the National Safety Council, have been prepared. These injury categories are defined in sections 2.3.3 through 2.3.5 of the Manual on Classification of Motor-Vehicle Traffic Accidents (Fourth Edition), ANSI Standard D16.1-1983. NSC estimates of the 1983 cost per injury for these categories are:

"Incapacitating" injury	$18,200
"Nonincapacitating evident" injury	$ 5,500
"Possible" injury	$ 1,300

These estimates may be helpful for cities and states that have difficulty applying "disabling" injury cost to the totals that are available in their jurisdiction.

Estimates used for deaths or property damage accidents are not changed by using these estimates.

Cost of Other Accidents

Because obtaining information on the number and seriousness of nonfatal injuries from home, public nonmotor-vehicle, and work accidents is difficult, estimate total costs on the "per death" basis using these averages:

Home accidents, per death	$500,000
Public nonmotor-vehicle accidents, per death	390,000
Work accidents, per death	1,600,000
(including indirect cost, per death)	3,000,000

Multiplying the number of deaths times these average costs gives an estimate of the economic loss due to *both* deaths and injuries in these categories.

The $3,000,000 work accident figure with indirect costs includes the monetary value of time lost by workers who were directly or indirectly involved in accidents. Losses from fires are the only property damage costs included in the work, home and public figures. No satisfactory estimates of other property damage costs are available.

The reason for the low home accident cost figure is that almost half the deaths, and many of the injuries, involve persons 65 years of age and older. Their wage losses are relatively small. The high cost of work accidents is due to the large wage loss figure, and the administrative cost of compensation insurance which amounted to over $570,000 per death (for both fatal and injury accidents) in 1983.

While multiple-fatality accidents such as those discussed for motor-vehicle accidents, probably are not found as frequently in the nonmotor-vehicle accident record, remember that one fire, explosion, or other disaster may account for most of a small community's annual fatality list. If this happens, estimate the costs by: (1) counting only one death for the disaster using the cost from the above figures; and (2) adding to this figure the cost for other disaster deaths using the age and sex table in the motor-vehicle section.

Even though a community generally will not be able to estimate the number of disabling injuries that occur in work, home, and public nonmotor-vehicle accidents, it may be useful to know the approximate economic loss per death and per disabling injury in these three classes of accidents. The table below shows the per case average cost of wage loss, medical expense, and insurance administration:

	Death	Disabling Injury
Home accidents	$100,000	$ 1,400
Public nonmotor-vehicle accidents	130,000	1,500
Work accidents	205,000	6,000
including indirect cost)	410,000	12,000

These figures do not include any estimate of property damage or nondisabling injury costs and should *not* be used to estimate the total economic loss to a community from these kinds of accidents.

Definitions

Wage loss includes the loss of wages (or the value of service) due to temporary inability to work, lower wages when returned to work due to permanent partial disability, and the present value of anticipated future earnings for permanent total disability or death.

Medical expense includes doctors' and hospitals' fees and certain other costs.

Insurance administration costs includes all administrative, selling and claims settlement expenses for insurance companies and self-insurers, but excludes payments on claims. Claim payments are included in wage loss and medical expense.

Disabling injury is one which results in death, some degree of permanent impairment, or renders the injured person unable to effectively perform his regular duties for a full day beyond the day of the injury.

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